

### Response

Attorney for applicant is appreciative of the thoroughness with which Examiner Gagliardi's April 2, 2003 Office Action. Claims 1, 8, 10 and 29 have been amended in response to the Examiner's § 112 rejections. The remaining claims were rejected under 35 U.S.C. § 103 and will be discussed in the same order employed by Examiner Gagliardi.

#### Claims 1-7, 16-18, 22-28 and 36-38

These claims were rejected based on a combination of Chou (U.S. 6,148,658) in view of Fujita et al. (U.S. 6,043,504).

The Examiner forthrightly states that "Chou does not specifically disclose the use of a light amplifier." However, the Examiner notes that Fujita discloses an optical fiber amplifier (col. 6, lines 57-63) and that Chou and Fujita could be combined. It is respectfully submitted that there is no teaching or suggestion that Chou and Fujita be combined.

Chou is directed to the analysis of isotopes having an absorption wavelength in the range of 1700-2500 nm (col. 2, line 58-col. 3, line 6). In contrast, Fujita is directed to detecting OH groups at 1,400-1,500 nm and CH<sub>2</sub> groups at 1,600 nm-1,800 nm (col. 5, lines 33-52). At col. 6, lines 57-63, Fujita describes an optical fiber amplifier "employing a semiconductor laser of a wavelength 1.48  $\mu$ m band or a 0.98  $\mu$ m band as excitation light for fiber doping erbium (Er) of a rare earth element in optical fiber has been developed." Thus, the optical fiber amplifier wavelengths of 980 and 1,480 nm as taught by Fujita, combined with Chou, would produce a combination that would be outside the 1700-2500 nm range of Chou. Such a combination would produce a system that would be inoperative for the analysis of the isotopes Chou seeks to analyze.

*In re Dembiczak*, 175 F.3d 544, 1560, 50 U.S.P.Q. 2d 1617 (Fed. Cir. 1999) involved an appeal of the rejection under § 103 of claims directed to plastic trash bags with a pumpkin face. The § 103 obviousness rejection was based on a combination of children's art references (Holiday and Shapiro) and conventional trash bag references. In reversing, the Federal Circuit noted that the portion of § 103 heading "at the time the invention was made" guards against entry into the "tempting but forbidden zone of hindsight". *Id.* at 998 (citations omitted). Specifically, the Federal Circuit noted that:

The Board's decision is limited to a discussion of the ways that the multiple prior art references can be combined to read on the claimed invention. . . . This reference-by-reference, limitation-by-limitation analysis fails to demonstrate how the Holiday and Shapiro references teach or suggest their combination with convention trash or lawn bags to yield the claimed invention. *Id.* at 1000.

And see, *McGinley v. Franklin Sports, Inc.*, 262 F.3d 1339, 1354, 60 U.S.P.Q. 2d 1001 (Fed. Cir. 2001) holding that:

[I]f references taken in combination would produce a "seemingly inoperative device", we have held that such references teach away from the combination and thus cannot serve as predicates for a *prima facie* case of obviousness. (Citations omitted).

It is respectfully submitted to combine that portion of a disclosure directed to detection OH and CH<sub>2</sub> describing the specific 1,480 nm and 980 wavelength bands (Fujita) with another disclosure teaching wavelength in the 1,700-2,500 nm range for isotope analysis (Chou) would produce a "seemingly inoperative device" in that the combination could not detect isotopes in the 1,700-2,500 nm range.

**Claims 8-15 and 29-35**

These claims have been rejected under 35 U.S.C. § 103 based on Chou, Fujita combined with MacKenzie (U.S. 6,403,944 B1). Applicant's earlier expressed views as to combining Chou and Fujita are equally applicable here. MacKenzie is directed to measuring a biological parameter such as glucose (Abstract). While the passage of MacKenzie relied on by the Examiner, col. 4, lines 33-40, does refer to multiple lasers, it begins by stating that “[t]he light source is **preferably** laser light source and is most suitably a pulsed diode laser . . . .” It is respectfully submitted that if MacKenzie were to be combined, without hindsight, to Chou and Fujita, its preferred embodiment would have been chosen.

**Claims 19-21 and 39-41**

Lastly, claims 19-21 and 39-41 have been rejected based on the previously discussed Chou and Fujita references combined with Nathel et al. (U.S. 6,015,969). Nathel is directed to detecting the oxygen content of blood using two different wavelengths (Abstract). See, for example, col. 1, lines 31-39:

The overall range is limited in wavelength, e.g., on the long wavelength side of the spectrum, longer than 1400 nanometers, by water absorption, and on the short wavelength side of the spectrum, shorter than 600 nanometers, by blood absorption. Between these higher and lower limits, the light that does penetrate the tissue is highly diffuse due to scattering. Such diffusion can otherwise obscure information that could be extracted from the non-scatter light.

It is respectfully submitted that there is no teaching to combine the Chou laser system for detecting isotopes with Fujita directed to necessary OH and CH<sub>2</sub>, and describing an optical amplifier outside the range of Chou, with Nathel who teaches that neither the laser of Chou or

the laser of Fujita could be used in the detection of oxygen in blood, because, as taught by Nathel, a two wavelength system is necessary to measure oxygen levels in blood.

Allowance of claims 1-41, as amended, is earnestly solicited.

Respectfully submitted

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